

A. M. STOCK.
 BARREL TAPPING DEVICE.
 APPLICATION FILED APR. 6, 1909.

961,739.

Patented June 14, 1910.

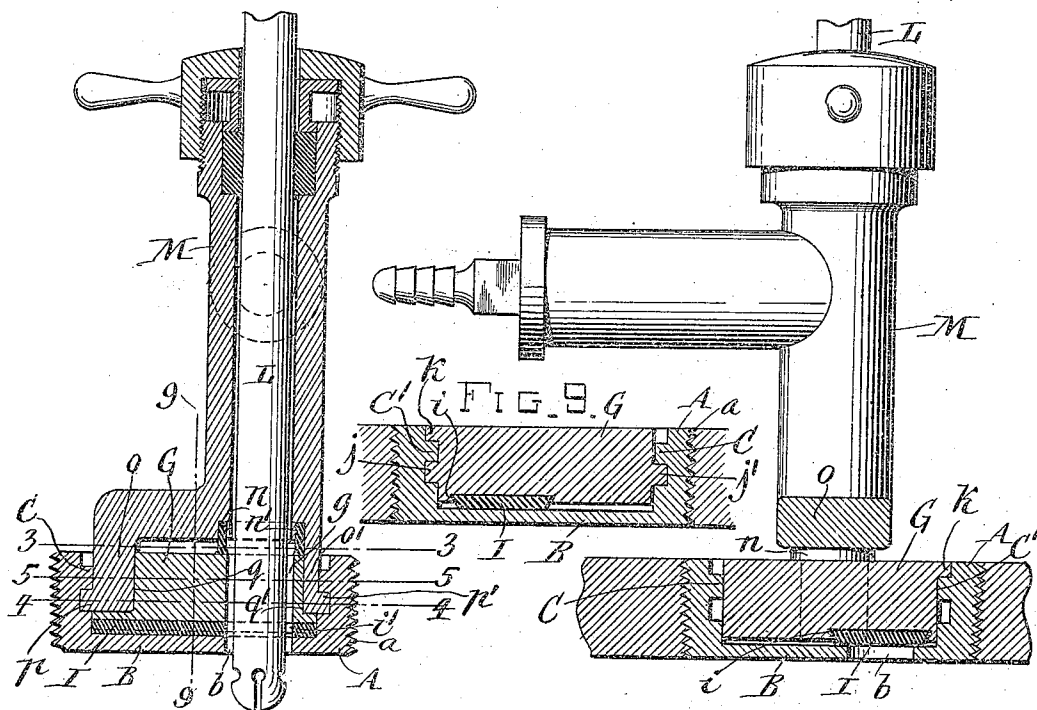


FIG. 1.

FIG. 2.

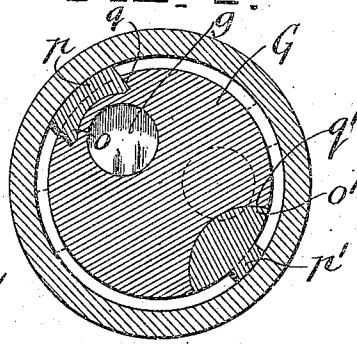
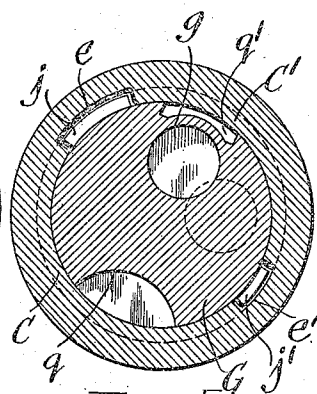
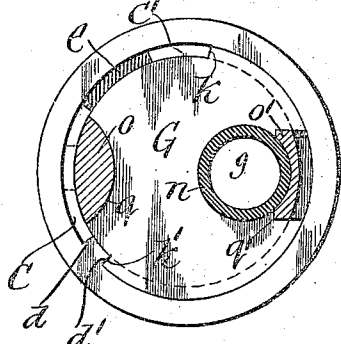


FIG. 3.

FIG. 5.

FIG. 4.

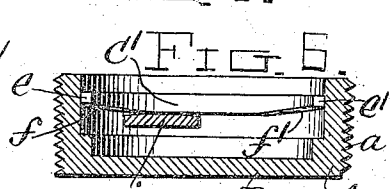
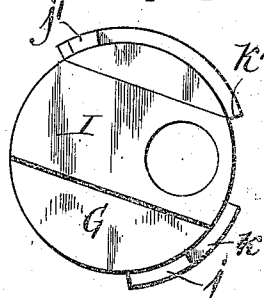
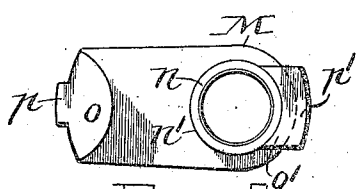


FIG. 6.

FIG. 7.

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UNITED STATES PATENT OFFICE.

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BARREL-TAPPING DEVICE.

961,739.

Specification of Letters Patent. Patented June 14, 1910.

Application filed April 6, 1909. Serial No. 488,157.

To all whom it may concern:

Be it known that I, AUGUSTA M. STOCK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Barrel-Tapping Devices, of which the following is a specification.

This invention relates to a tapping device which is more particularly designed for tapping beer barrels but which may also be used for other purposes.

The object of this invention is to produce a tapping device of this character in which the valve cannot be removed from its bushing or casing either in its opened or closed position when manipulated by the coupling tube but which can be removed from the casing when in a position intermediate of its open and closed positions to permit of cleaning and pitching the barrel when it is empty.

In the accompanying drawings: Figure 1 is a vertical longitudinal section of the tapping device showing the valve open. Fig. 2 is a similar view showing the valve closed. Figs. 3, 4 and 5 are transverse sections in the correspondingly numbered lines in Fig. 1, but showing different positions of the valve disk. Fig. 6 is a detached section of the valve casing taken lengthwise of its axis. Fig. 7 is an inner face view of the valve disk. Fig. 8 is a similar view of the coupling tube. Fig. 9 is a cross section in line 9—9, Fig. 1.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents the casing or bushing of the valve which is preferably of circular form and has an external screw thread *a* whereby the same is secured in an opening in the barrel. At its inner end this casing is provided with a head B which has a port or passage *b* on one side of the center of the casing and on its bore the latter is provided with two circumferentially extending locking ribs C, C' between its outer and inner sides and a pair of stops or shoulders *d*, *d*¹ at the outer side of the casing. The opposing ends of the locking ribs are separated by intervening gaps or spaces *e*, *e*¹ and each rib is beveled or inclined on its inner side at opposite ends in opposite directions, as shown at *f*, *f*¹, Fig. 6.

G represents a valve disk or stopper which

is arranged within the casing on the outer side of its head and provided with a port or passage *g*. Upon turning the valve disk in one direction its port may be brought into line or register with the port of the casing head and the valve is open, as shown in Figs. 1 and 3, while upon turning the valve disk in the other direction, the solid part of the same is brought over the port of the casing head and the valve is closed, as shown in Figs. 2 and 4.

For the purpose of making a liquid tight joint between the valve disk and casing both in its open and closed position, a packing is provided which preferably consists of a strip I of fiber or similar material which is secured in a dovetail or undercut groove or seat *i* formed transversely on the inner side of the valve disk, so as to cover the area of the disk which is over the casing port both in the open and closed position of the disk. The packing is provided with an opening *i*¹ in line with the port of the disk, so as to practically form a continuation thereof.

Between its inner and outer sides the valve disk is provided on opposite sides of its periphery with laterally projecting locking lugs *j*, *j*¹ which are adapted to pass through the gaps *e*, *e*¹ in assembling or dismembering the valve and to engage with the inclined inner sides of the locking ribs, as shown in Figs. 6 and 9, for holding the parts in an assembled condition and also tightening the disk on the casing with a wedge action in its open and closed position.

On the outer part of its periphery the valve disk is provided with two shoulders or stops *k*, *k*¹ which are adapted to engage respectively with the stops or shoulders *d*, *d*¹ of the casing for limiting or arresting the rotative or oscillating movement of the disk relatively to the casing. The stops *k*, *k*¹, *d*, *d*¹ are so located relatively to each other that when turning the valve disk fully in one direction or toward the left, the stops *d*, *k* engage and arrest the valve disk in such position that the solid or imperforate part of the packing is over the port of the casing while upon turning the valve disk in the opposite direction or toward the right until the stops *d*¹, *k*¹ engage, as shown in Fig. 3, then the valve disk will be arrested with its port and the opening in the packing in line or register with the port of the valve casing. Upon turning the valve disk for closing the

valve, its locking lugs engage with the pair of inclines f at diametrically opposite ends of the locking ribs, whereby the valve disk is pressed with its packing against the head of the casing while upon turning the disk fully in the opposite direction the locking lugs of the same engage with the other pair of inclines f^1 , on the opposite corresponding ends of the locking ribs, thereby again pressing the disk and its packing against the head of the casing. The gaps e , e^1 between the locking ribs and the stops of the casing are so arranged relatively to the locking lugs and stops of the disk that the lugs are in line with said gaps when the disk is in a position intermediate of its extreme movement in either direction, as shown in Fig. 5, which is determined by said cooperating pairs of stops on the casing and disk, thereby permitting the disk to be applied to the casing or removed therefrom only when it is neither open nor closed, but permitting of holding the same tight in the casing both in its open and closed positions so as to avoid leakage.

M represents the coupling tube of the tapping device which is adapted to be secured to the valve disk with its passage in line with the port therein, and L the tapping tube which is adapted to be pushed through the coupling tube and the ports of the valve disk, head and packing when the same are in line. A tight joint is produced between the coupling tube and the valve disk when the same are coupled by means of a washer or packing ring n of rubber or other suitable material arranged in an annular groove n^1 at the inner end of the coupling tube around the passage therein and bearing against the outer side of the valve disk around the port therein.

Means are provided for permitting the valve disk to be turned into its open and closed position by the coupling tube and to hold said tube and disk in coupled condition when turned in position for opening the valve and permit the tube to be applied to or removed from the disk only when the latter is turned in the position which closes the valve. For this purpose the coupling tube is provided on opposite sides with two arms o , o^1 which project inwardly and are provided at their inner ends with laterally projecting locking lugs p , p^1 and the valve disk is provided on opposite sides of its periphery with recesses or sockets q , q^1 which are out of line with its locking lugs. While the valve disk is in its closed position, its recesses q , q^1 are opposite the gaps e , e^1 , respectively, between the locking ribs of the valve casing. In applying the coupling tube to the disk and casing its arms are inserted in the recesses q , q^1 of the disk and its locking lugs p , p^1 are passed inwardly through the gaps e , e^1 until the same are in front of the locking ribs of the

casing. Upon now turning the disk and coupling tube in the direction for opening the valve, the locking lugs of the tube move in front of the inner sides of the locking ribs of the casing, as shown in Fig. 1, so that the coupling tube is held in place on the disk and case while the valve is open, rendering it necessary to turn the disk back into its closed position before the coupling tube can be again detached from the valve.

To facilitate the assembling of the disk, casing and coupling tube in the proper relation of these parts, the same are so constructed that they cannot be assembled in any way other than that in which the port of the disk will move in the direction into and out of register with the port of the casing and the passage in the coupling tube will be in line with the port of the disk. As shown in the drawings, this is accomplished by making the cooperating locking lug j of the disk and the gap e of the casing wider than the companion lug j^1 and gap e^1 on the opposite side of the valve and also making the cooperating arm o and plug p of the coupling tube and recess q of the disk different in form from the companion arm o^1 , plug p^1 and recess q^1 on the opposite side of the coupling tube and disk.

In order to enable the valve disk to be turned into intermediate position in which its locking lugs are in line with the gaps e , e^1 and permit the removal thereof for cleaning and pitching, a separate key is provided which is provided with arms corresponding to those of the coupling tube, the arms of the key being however unprovided with locking lugs, so that no interlocking with the ribs of the casing occurs when the key turns the valve disk into its intermediate free position.

It will be noted that my improved tapping device comprises comparatively few parts which are of simple construction and can be produced at low cost, and the parts can be quickly assembled and dismembered for cleaning and sterilizing.

I claim as my invention:

1. A tapping device comprising a valve casing having a head provided with a port on one side of its center, and having circumferential ribs on its bore which are separated at their opposing ends by intervening gaps, and a valve disk rotatable in said casing on the outer side of its head and having a port on one side of its center and provided on its periphery with laterally projecting locking lugs which are adapted to pass through said gaps in assembling the parts and to engage the inner sides of said ribs on one side of said gaps upon turning the disk in one direction and to engage the inner sides of said ribs on the opposite sides of said gaps upon turning the disk in the opposite direction.

2. A tapping device comprising a valve casing having a head provided with a port on one side of its center, and having circumferential ribs on its bore which are separated at their opposing ends by intervening gaps, and a valve disk rotatable in said casing on the outer side of its head and having a port on one side of its center and provided on its periphery with laterally projecting locking lugs which are adapted to pass through said gaps in assembling the parts and to engage the inner sides of said ribs on one side of said gaps upon turning the disk in one direction and to engage the inner sides of said ribs on the opposite sides of said gaps upon turning the disk in the opposite direction, the end portions of the inner sides of said ribs adjacent to said gaps being inclined so that when engaged by said locking lugs the valve disk will be pressed with a wedge action toward said head.

3. A tapping device comprising a valve casing having a head provided with a port on one side of its center, and having circumferential ribs on its bore which are separated at their opposing ends by intervening gaps, and a valve disk rotatable in said casing on the outer side of its head and having a port on one side of its center and provided on its periphery with laterally projecting locking lugs which are adapted to pass through said gaps in assembling the parts and to engage the inner sides of said ribs on one side of said gaps upon turning the disk in one direction and to engage the inner sides of said ribs on the opposite sides of said gaps upon turning the disk in the opposite direction, said casing and disk having cooperating stops for limiting the oscillation of the latter.

4. A tapping device comprising a valve casing having a head provided with a port on one side of its center, and having circumferential ribs on its bore which are separated at their opposing ends by intervening gaps, and a valve disk rotatable in said casing on the outer side of its head and having a port on one side of its center and provided on its periphery with laterally projecting

locking lugs which are adapted to pass through said gaps in assembling the parts and to engage the inner sides of said ribs on one side of said gaps upon turning the disk in one direction and to engage the inner sides of said ribs on the opposite sides of said gaps upon turning the disk in the opposite direction, said casing and disk having cooperating stops which arrest the movement of said disk on opposite sides of the position in which its locking lugs register with said gaps.

5. A tapping device comprising a valve casing having a head which is provided on one side of its center with a port and having circumferential ribs on its bore which are separated at their opposing ends by intervening gaps, a valve disk rotatable in said casing on the outer side of said head and having a port on one side of its center which is adapted to be moved into and out of register with the port of said head and provided on its periphery with locking lugs adapted to be passed lengthwise through said gaps and engaged with the inner sides of said ribs either on one side or the other of said gaps and also provided on its periphery with coupling recesses which are out of line with the locking lugs of the disk, said casing and disk being provided with cooperating stops which arrest the oscillating movement on opposite sides of the position in which the locking lugs of the disk register with said gaps, and a coupling tube having arms which are adapted to engage with said recesses of the disk and said arms being provided with laterally projecting locking lugs which are adapted to pass through said gaps and engage with the inner sides of said ribs upon turning the disk in the direction for bringing its port into register with the port of said casing head.

Witness my hand this 31st day of March, 1909.

AUGUSTA M. STOCK.

Witnesses:

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E. M. GRAHAM.